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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/079,936 | 02/19/2002 | Mohsen Kavehrad | 823.0116USU | 6519 |

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Paul D. Greeley, Esq.
Ohlandt, Greeley, Ruggiero & Perle, L.L.P.
10th Floor
One Landmark Square
Stamford, CT 06901-2682

EXAMINER

PHAN, HANH

ART UNIT PAPER NUMBER

2638

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/079,936 | KAVEHRAD ET AL. | |
| | Examiner | Art Unit | |
| | Hanh Phan | 2633 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>09/03/2002</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-5, 9, 10 and 12-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Allen et al (US Patent No. 5,245,460), cited by applicant.

Regarding claims 1 and 12, referring to Figures 1-6, Allen discloses an infrared communications system comprising:

a multi-beam transmitter (i.e., transceiver 20 including a transmitter and a receiver, Fig. 1) for producing an array of diffusing spots (28, Fig. 1) upon a reflecting surface (col. 1, lines 61-65); and

a receiver (i.e., transceivers 22 and 24, each transceiver comprising a transmitter and a receiver, Fig. 1) comprising a plurality of receiving elements;

wherein each the receiving element (22, 24) has an independent field of view that is in line of sight of at least one of the diffusing spots (col. 1, lines 61-67 and col. 2, lines 1-10 and lines 65-67 and col. 3, lines 1-35).

Regarding claims 2 and 13, Allen further teaches the reflecting surface is a ceiling of a room (Fig. 1).

Regarding claims 3 and 14, Allen further teaches the array is in the form of a regular grid (Figs. 1-6).

Regarding claims 4 and 15, Allen further teaches the grid of diffusing spots is formed via the emission from the transmitter (22, Figs. 1-6) of a plurality of collimated beams of equal intensity.

Regarding claims 5 and 16, Allen further teaches the diffusing spots are approximately equidistantly positioned from one another (Fig. 2).

Regarding claims 9 and 17, Allen further teaches each the receiving element is aimed in a different direction (Figs. 1-6).

Regarding claim 10, Allen further teaches the receiver is a multi-branch receiver (Figs. 1-6).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allen et al (US Patent No. 5,245,460 cited by applicant) in view of Hinton et al (US Patent No. 5,195,103 cited by applicant).

Regarding claim 6, Allen teaches all the aspects of the claimed invention except fails to teach the transmitter comprises a light source, collimating optics, and a spot

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array generator. However, Hinton in US Patent No. 5,195,103 teaches a transmitter comprises a light source (12)(Fig. 1), collimating optics (24), and a spot array generator (22)(Fig. 1)(col. 3, lines 16-67 and col. 4, lines 1-14 and see abstract section).

Therefore, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the transmitter comprises a light source, collimating optics, and a spot array generator as taught by Hinton in the system of Allen. One of ordinary skill in the art would have been motivated to do this since Hinton suggests in column 3, lines 16-17 and col. 4, lines 1-14 and abstract section that using such the transmitter comprises a light source, collimating optics, and a spot array generator has advantage of allowing generating an array of optical beams or spots and to communicate with an array of optical sensitive devices utilized in applications such as optical computing or photonic switching.

Regarding claim 7, the combination of Allen and Hinton teaches the spot array generator is a holographic optical element (Fig. 1 of Hinton, col. 3, lines 16-67 and col. 4, lines 1-14).

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Allen et al (US Patent No. 5,245,460 cited by applicant) in view of Sui et al (US Patent No. 5,995,235).

Regarding claim 8, Allen teaches all the aspects of the claimed invention except fails to teach the receiving element comprises a band-pass filter, a concentrator and a photodetector. However, Sui in US Patent No. 5,995,235 teaches receiving element

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comprises a band-pass filter (118), a concentrator (116) and a photodetector (120)(Figs. 1 and 2, col. 3, lines 44-57) . Therefore, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the receiving element comprises a band-pass filter, a concentrator and a photodetector as taught by Sui in the system of Allen. One of ordinary skill in the art would have been motivated to do this since Sui suggests in column 3, lines 44-57 and that using such the receiving element comprises a band-pass filter, a concentrator and a photodetector has advantage of allowing selecting the wanted signal and eliminating the unwanted signals and signal noise and focusing the optical beam.

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Allen et al (US Patent No. 5,245,460 cited by applicant) in view of Jannson et al (US Patent No. 5,293,272).

Regarding claim 11, Allen teaches all the aspects of the claimed invention except fails to teach the receiving element comprises a curved holographic mirror. However, Jannson in US Patent No. 5,293,272 teaches the receiving element comprises a curved holographic mirror (Figs. 3 and 19-22, col. 5, lines 3-20). Therefore, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the receiving element comprises a curved holographic mirror as taught by Jannson in the system of Allen. One of ordinary skill in the art would have been motivated to do this since Jannson suggests in column 5, lines 3-20 and that using such the receiving

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element comprises a curved holographic mirror has advantage of allowing reflecting and focusing the optical beam and reducing the signal noise.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Phan whose telephone number is (571)272-3035.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached on (571)272-3022. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-4700.


HANH PHAN
PRIMARY EXAMINER